

Exploring the impact of Shared-Book Reading on  
School-age Children's Understanding of Emotions

by

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A thesis submitted in partial fulfillment  
of the requirements for the degree of  
Master of Arts (MA) in Psychology

The Faculty of Graduate Studies  
Laurentian University  
Sudbury, Ontario, Canada

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**THESIS DEFENCE COMMITTEE/COMITÉ DE SOUTENANCE DE THÈSE**  
**Laurentian University/Université Laurentienne**  
Faculty of Graduate Studies/Faculté des études supérieures

Title of Thesis Titre de la thèse	Exploring the impact of Shared-Book Reading on School-age Children's Understanding of Emotions	
Name of Candidate Nom du candidat	Quenneville, Joannie	
Degree Diplôme	Master of Arts	
Department/Program Département/Programme	Psychology	Date of Defence Date de la soutenance August 01, 2019

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## Abstract

Emotion comprehension has been shown to have numerous benefits, many of these being in the areas of social and academic functioning. Emotion comprehension starts to develop in early childhood and because of its many advantages, studies have used various interventions to try and teach emotion comprehension skills to children of different ages. The few interventions in the literature were complex, not readily accessible, lengthy or required much training for administrators. Some of these studies also combined a variety of different strategies and tools, making it unclear which specific components are effective. The current study looked solely at the effectiveness of shared book reading with picture books created based on current models of emotion comprehension. Forty-five children were divided into control and experimental groups. Over the course of seven exposures, results revealed significant gains in emotion comprehension for both groups, with gains from children in the experimental group being slightly greater than those in the control group. These results give promising insight, suggesting that a short intervention such as this one could be effective in future studies with the combination of strategies by isolating different strategies and looking at their effectiveness.

*Keywords:* emotion comprehension, shared-book reading, school-aged children, picture books, emotion, stages of emotion comprehension.

## Acknowledgements

Firstly, I would like to thank my thesis advisor, Dr. Mélanie Perron, who, for many years now, has been a great mentor and teacher. Mélanie, je suis extrêmement chanceuse et reconnaissante de t'avoir eu comme superviseure et d'avoir eu la chance de travailler avec toi. Tu es une personne très patiente, généreuse et qui a toujours la réussite de ses étudiants à coeur. Tes conseils, ton aide et ton expertise m'ont beaucoup aidé. Merci pour tout, et merci de toujours être disponible et de toujours prendre le temps de m'aider.

To Dr. Annie Roy-Charland, you played a big role in my success these last 6 years. I am very grateful that you saw potential in me in second year and that you took me on as your student. Thank you for all the wonderful opportunities you have given me. Even with your move to Moncton, you always take the time to give me feedback and to quickly respond to my e-mails and messages. You are extremely knowledgeable, helpful, and just an overall great person, professor and mentor. Je suis infiniment reconnaissante. Merci.

À Dr. Isabelle Carignan, merci d'avoir accepté d'être sur mon comité. J'en ai beaucoup appris grâce à ton expertise. J'apprécie tes commentaires très détaillés ainsi que tes idées et suggestions. Je te donne mes plus sincères remerciements pour ton temps, et pour ta rétroaction qui m'a aidé à bien rédiger ma thèse.

I would also like to thank my family for their patience and for being able to deal well with me on stressful days. All the support and encouragement is really appreciated. All of this would not have been possible without

hout all of you. Merci, et je vous adore!

Lastly, the last two years would not have been the same if it wasn't for the other members of my cohort. I would like to thank each of you for the good times, the endless laughs as well as all the good memories we've created over the last two years. We share a special bond and although we will soon be taking different paths, I know we will keep in touch and the friendships we've created will last forever.

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## **Chapter 1**

### **1 Introduction**

Research in the last 20 years has demonstrated that with age, children's understanding of emotions changes and develops (Pons & Harris, 2000 and Pons, Harris & de Rosnay, 2000). The understanding of emotions emerges in early childhood (Pons & Harris, 2005). As children get older, they develop an understanding of the nature of their emotions and those of others, their causes as well as the possibility of controlling these emotions (Pons & Harris, 2005). Emotion comprehension is an essential part of emotional competency and plays an important role in social and academic functioning. Research has shown that children with a better understanding of emotions have a better quality of social adjustment and academic achievement compared to children with a poor emotional comprehension, who show difficulties in social and academic settings (Harrison & Paulin, 2000; Harris & Pons, 2003; Pons, Harris & Doudin, 2002, 2004). Because of the important role of emotional comprehension, it is essential to understand how these skills can be promoted. The goal of the current study was to examine if a simple activity such as shared book reading using books created based on a model of emotion comprehension could serve as a tool to promote emotional comprehension in school-aged children.

#### **1.1 Emotion comprehension and social and academic adaptation**

Research has shown that children who have a better understanding of emotions have less problems related to school performance and behaviour (Hughes, Dunn & White, 1998) and have better social skills (Cassidy, Parke, Butkovsky & Braungart.

1992). In the last few years, research has focused on the influence of emotion comprehension on children's academic performance. In fact, research has shown that the extent to which children understand their own emotional functioning as well as that of others is a determining factor for their academic achievement (Harrison & Paulin, 2000; Harris & Pons, 2003). Thus, children who have a poor understanding of emotions tend to also have a poorer academic achievement (Harrison & Paulin, 2000; Harris & Pons, 2003).

The relationship between emotional comprehension and social skills has also been studied. Dunn and Cutting (1999) demonstrated that in 4-year-old children, the better the comprehension of emotions, the better the quality of social games. For example, in social games where there is good cooperation and communication between the children.

Edwards, Manstead and MacDonald (1984) have also demonstrated that when children are asked to recognize the emotion while looking at facial expressions, those with a better performance are the most popular amongst their classmates a few years later. The same relationship was found in older children. For example, McDowell, O'Neil & Parke (2000) found that among 9 year olds, girls who have a good comprehension of the control of negative emotions are described as being more socially competent by their teachers and friends. In 11 – 13 year olds, Bosacki and Astington (1999) also found a positive relationship between emotional comprehension and social skills as described by their teachers. A good comprehension of emotions is linked to many advantages in terms of social and academic functioning. Thus, trying to teach emotion comprehension skills can have many benefits for children.

## 1.2 Development of emotion understanding

Research has demonstrated that important changes take place in children's emotion comprehension between the ages of 18 months and 12 years (Pons & Harris, 2000; Pons, Harris & de Rosnay, 2000). Previous research supports a model in which nine different components of emotion understanding are divided into three stages distributed from the ages of approximately 3 to 12 years. The stages, components and examples for each are found in Table 1 and Table 2.

The first stage, which includes components 1, 2 and 5 focuses on the understanding of external causes of emotion. The first component of this stage, *Recognition*, emerges around the age of 3, when children are able to recognize cues on the face and start naming the basic emotions. Most children at this age start to recognize facial expressions for happiness, sadness, fear and anger (Bullock & Russell, 1985; Cutting & Dunn, 1999; Denham, 1986; Dunn, Brown & Beardsall, 1991 ; Hughes & Dunn, 1998; Rothenberg, 1970). An example for this component would be for a child to recognize the face of a happy person or of a sad person. The second component, *External cause*, also starts at approximately 3-4 years of age when children start gaining an understanding of how external causes can affect the emotions (or the feelings) of others. For instance, they can anticipate sadness when someone else breaks their favourite toy, happiness when someone else receives candy or ice cream or fear when an individual is being chased by a bear (Barden, Zelco, Duncan & Masters, 1980; Cutting & Dunn, 1999; Denham, 1986; Borke, 1971; Fabes, Eisenberg, Hyman & Michaelieu, 1991; Harris, Olthof, Meerum Terwogt & Hardman, 1987; Hughes & Dunn, 1998). The last component of this stage, *Reminder*, starts at approximately 3-6 years when children start to

understand the relationship between memory and emotion. They can start understanding that some cues from a present situation can reactivate past emotions and that an emotion gets less intense with time. For example, when reminding somebody about the time their pet passed away, this can reactivate the past emotion of sadness (Harris, 1983; Harris, Guz, Lipian & Man-Shu, 1985; Lagattuta & Wellman, 2001; Lagattuta, Wellman & Flavell, 1997; Taylor & Harris, 1983).

The second stage, which includes components 3, 4 and 7 focuses on the understanding of internal causes of emotion, such as understanding the role of cognitive processes. The *Desire* component develops at approximately 3-5 years when children start gaining an understanding that people's desires can influence their emotional reactions. They can understand that two people may react differently to the same situation because their desires are different. For example, two people are in gym class about to play soccer, but one person loves soccer while the other dislikes it (Harris, Johnson, Hutton, Andrews & Cooke, 1989; Yuill, 1984). The next component, *Beliefs*, starts at approximately 4-6 years, when children start to understand that a person's feelings or emotional reaction to a specific situation will be determined by their beliefs. One example is attributing an emotion to an individual who is terrified of spiders but does not see the spider near them (Bradmetz & Schneider, 1999; Fonagy, Redfern & Charman, 1997; Hadwin & Perner, 1991; Harris et al., 1989). The next component, *Hiding*, starts at approximately 4 to 6 years when children begin understanding that there can be a difference between the expression of an emotion and the actual emotion that is felt. For example, a child might be sad that they did not receive the gift they wanted from their grandmother, but still smile because they do not want to upset her (Gardner, Harris,

Ohmoto & Hamazaki, 1988; Gross & Harris, 1988; Harris, Donnelly, Guz & Pitt-Watson, 1986; Jones, Abbey & Cumberland, 1998; Joshi & MacLean, 1994; Saarni, 1979).

The third stage includes components 6, 8 and 9 and focuses on the more complex, reflective dimensions of emotion. *Regulation* begins at approximately 6-7 years, when children start using strategies to control their emotions. Children aged 6-7 years mostly use behavioural strategies while older children (approximately 8 years old) begin using psychological strategies such as denial or distraction. For example, a child who is sad can think of happy thoughts to stop feeling sad (Altshuler & Ruble, 1989; Band & Weisz, 1988; Harris, 1989; Harris, Olthof & Meerum Terwogt, 1981; Meerum, Terwogt & Stegge, 1995). The eighth component, *Mixed*, starts at approximately 8 years, when a child begins to understand that an individual can have multiple or contradictory emotional responses to a situation. For example, a child can be very happy to get their first dog, but scared to get bit (Arsenio & Lover, 1999; Brown & Dunn, 1996; Donaldson & Westerman, 1986; Fischer, Shaver & Carnochan, 1990; Harris, 1983; Harris, Olthof, & Meerum Tergwot, 1981; Harter & Buddin, 1987; Hughes & Dunn, 1998; Kestenbaum & Gelman, 1995; Meerum Terwogt, Koops, Oosterhoff & Olthof, 1986; Peng, Johnson, Pollock, Glasspool & Harris, 1992; Steele, Steele, Fonagy, Croft & Holder, 1999). The ninth component, *Morality*, starts at approximately 8 years, when a child begins to understand that an action such as stealing, lying, etc., can cause negative feelings and that an action such as making a sacrifice, resisting a temptation or confessing a wrongdoing, for example, can cause positive feelings (Harter & Whitesell, 1989; Harter, Wright & Bresnick, 1987; Nunner-Winkler & Sodian, 1988; Lake, Lane & Harris, 1995)

### **1.3 Teaching emotion understanding to children**

Given the importance of emotional comprehension in children's overall adaptation in multiple settings, different programs have been developed in order to help children develop their comprehension of emotions. The School Matters in Lifeskills Education Program (SMILE) is one program that was developed in the United Kingdom (Pons, Harris & Doudin, 2002) based on the previous model of emotion comprehension. This program, that can be used with children from 4-12 years, focuses on teaching expressed and felt emotions, real and imaginary emotions as well as past, present and future emotions. The program was designed to teach the child about his/her own emotions, as well as those of others, both when they are in a group or alone. Thirteen themes are addressed in the SMILE. A few examples of these are the origins of sadness, fear and anger and strategies for coping with these, emotions brought out by a loss, separation, abandonment, exclusion and harassment, strategies for coping with these emotions and the difference between apparent and actual emotions.

Pons, Harris & Doudin (2002) used the SMILE program to train an experimental group during a 3-month period. Prior to the training, teachers had to attend a two-week training course to learn how to use the SMILE program. Children in the experimental group as well as in the control group received a pre-test, training period as well as a post-test. The pre-test and post-test were done with the Test of Emotional Comprehension (TEC), a measure developed to evaluate children's understanding of the nine components of emotion understanding. The test uses picture books as well as cartoon scenarios. The children in the control group received standard training from the regular curriculum during the training period while those from the experimental group were trained with the

SMILE program. Children from the experimental group received the SMILE program for half an hour per day. Results revealed that 83% of children in the experimental group improved on their understanding of emotion, while only 22% of children in the control group improved.

Although the SMILE program was shown to be effective, this program may have some limitations that prevent from a massive use of the tool. Firstly, teachers and/or educators need to attend two weeks of training before being able to administer the SMILE program to children. The program itself also takes several months. Thus, it is a time consuming process. Because of the length of the program and the training requirements, it is only available to a few children and therefore not accessible to all students. Finally, because of the many activities and the themes in the program, it still remains unclear which specific parts of the program are successful at improving emotion comprehension (e.g. the induction of emotion, the teaching of emotion or the discussion about emotions).

## **1.4 Shared book reading**

Shared book reading is a reading activity in which a skilled reader such as a parent, a teacher or a sibling reads aloud to a child (Levy, Gong, Hessels, Evans & Jared, 2006). Research has shown that this activity can help teach skills that are necessary to learn how to read (see meta-analysis by Bus, Van IJzendoorn & Pellegrini, 1995 and review by Scarborough & Dobrich, 1994). Research on shared book reading have found this activity to have many benefits, such as developing print awareness, familiarizing children with grammar and syntax, new vocabulary, word structure, knowledge of literate discourse rules, etc. (e.g., Brett, Rothlein, & Hurley, 1996; Bus et al., 1995; Elley, 1989;

Evans & Saint-Aubin, 2013; Mol, Bus, & de Jong, 2009; Pick, Unze, Brownell, Drozdal, & Hopmann, 1978; Scarborough & Dobrich, 1994; Senechal, 1997).

In a recent study by Evans and Saint-Aubin (2013), it was examined if children could learn new vocabulary during shared book reading by using repetition as a tool. In this study, children were exposed to the same picture books seven times and without help or explanation to see if they could learn new words by simply listening to the story and looking at the illustrations. Results from this study revealed that when no intervention was done, children were able to make significant vocabulary gains. Thus, children were able to make links between the words they heard and the corresponding illustrations to learn new vocabulary.

To the best of our knowledge, very little research has examined shared book reading as a strategy to help children develop the understanding of emotions. In a study by LaForge, Perron, Roy-Charland, Roy and Carignan (2018) the first six components of emotional comprehension were examined with pre-school aged children using shared-book reading. The goal of this study was to see whether it was possible to teach the first six components of emotion comprehension based on the Pons and Harris model to pre-school age children over a three-week period. Children were divided into two groups, one control group and one experimental group. All children were seen seven times over the course of three weeks. Six picture books were created based on the model of emotion comprehension by Pons et al., (2004). All books, each representing one of the first six components of emotional comprehension were read seven times to children from the experimental group. Six other books with no link to emotional comprehension were read to children in the control group. All children were administered the Test of Emotion



Comprehension (TEC) at pre- and post-test. Results from this study revealed significant gains in emotional comprehension for the children in the experimental group using evidence based picture books. However, the sample size for this study was small, the age group was limited to 3 and 4 year olds and the last 3 components of the Pons and Harris model were not examined. Thus, further research would be needed to overcome these limitations.

The goal of the current study is to use shared book reading as a tool to teach emotion comprehension skills to school-aged children. The purpose of using this procedure is that it overcomes the limitations of the SMILE program mentioned above and that it extends on the work of LaForge et al (2018). We will examine the effectiveness of shared book reading using 9 picture books created based on the Pons and Harris model of teaching the nine different components of emotional comprehension to children in grades 1 through grade 6. LaForge et al., (2018) found significant gains in emotional comprehension using six of the same evidence-based picture books used in this current study to examine the first six components of emotional comprehension in pre-school aged children. Thus, for the current study, it is hypothesized that gains would also be observed for all nine components as this study will be looking at school-aged children.

## Chapter 2

### 2 Method

#### 2.1 Participants

Forty-five children (21 boys, 24 girls) recruited in francophone schools in the community of Greater Sudbury took part in the study. The children were divided into 2 groups: a control group and an experimental group. The control group was composed of 13 girls and 9 boys with a mean age of 109 months (*SD*: 19.62). The number of children in each grade is shown in table 3. The experimental group was composed of 11 girls and 12 boys with a mean age of 96.42 months (*SD* = 12.77). Out of the 45 participants, 44 completed the Home-Literacy Questionnaire. Thirty-four participants came from two-parent families, 6 came from shared-custody families and 4 came from single-mother families. More than half of the mothers (62%) and 16% of the fathers reported having completed postsecondary education, either a bachelor's degree, master's degree or doctoral degree, while 31% of the mothers and 60% of the fathers reported having attended college. A considerable number of families (40%) reported having an annual income higher than \$100 000; 22% of families reported earning between \$85 000 and \$100 000; 9% of families reported earning between \$70 000 and \$85 000; 7% reported earning between \$55 000 and \$70 000; 2% reported earning between \$26 000 and \$40 000 and finally, 7% of families reported having an annual income between \$16 000 and \$26 000. Most of the families (67%) reported owning at least 75-200+ children's books, and 32% of families indicated owning between 1 and 75. Finally, most parents completing the questionnaire indicated reading to their children at least 3 times a week, with 31% of parents reporting that these sessions last less than 10 minutes; 36% reporting

that these last between 10 and 20 minutes; 20% reporting that these last between 20 and 30 minutes and 7% reporting that they read to their children for sessions lasting between 30 and 40 minutes.

## 2.2 Materials

**Home Literacy Experience Questionnaire.** To collect information on the children's reading activities and on the family's demographic information, a French translated version of the Home Literacy Experiences Questionnaire (Levy et al., 2006) was sent to the children's homes a few weeks before the experimental session to be answered by parents. This questionnaire includes questions about parents' income as well as reading habits and activities in the household, the number of books in the home, etc.

**Vocabulary measure.** The French version of the PPVT (Peabody Picture Vocabulary Test), the *ÉVIP* form B, was used as the vocabulary measure. Children's receptive vocabulary was assessed by presenting the child with four possible choices, and asking them to point to the correct illustration of a word (Dunn et al., 1993). Test-retest reliability for this tool is approximately .78 for children ages 4 to 10. Internal consistency for Form B is .80 and the concurrent validity with other vocabulary measures is .86.

**Complex graphemes.** Children were asked to read small groups of letters that make sounds. This measure has a total of 28 graphemes and 4 are presented at once on a sheet. Children were told to try their best to read the sounds. All 28 graphemes were presented to each child.

**Oral Word Reading Measure.** Children were asked to read French words aloud. The measure has a total of 42 words, and 4 are presented at once on a sheet. The words increasingly get more complex. Children were told to try as best as they could if they did

not recognize the word. The discontinue rule for this measure is four errors on six consecutive words.

**Test of Emotional Comprehension.** The Test of Emotional Comprehension (TEC) by Pons and Harris (2000) was administered to evaluate children's emotional comprehension. The test includes two picture books, one version for boys and one version for girls. The items in the two books were identical, only the protagonist's names were changed. On each page, a cartoon scenario was illustrated in a 16 cm X 11 cm frame. Under each scenario, four possible emotional outcomes were presented, usually as facial expressions. Figure 2 shows an example of the cartoon scenario and possible emotion outcomes on the TEC. The experimenter followed a script for each scenario. A more detailed explanation is given below, in the procedure.

**Picture books.** Nine picture books were created by the artists Émilie Roy and Jessica Dénomée, one per component of emotion tested. These books were created to represent the different emotional components, components I, II, III, IV, V, VI, VII, VIII and IX. The text and the illustrations were displayed on different pages. The text was found on the left and the illustrations were found on the right.

The first book, *Les émotions* [Emotions] is composed of 13 pages, including the title page,. 19.83 words and 99.67 characters were found on each page. This book was created to represent the first component (*Recognition*), in the first stage. The story described the different facial characteristics associated with each emotion. For example, *Lorsque Jade est triste, les coins de sa bouche pointent le sol et l'intérieur de ses sourcils pointe le ciel* [When Jade is sad, the corners of her mouth point to the ground and the insides of her eyebrows point toward the sky. ]

The second book, *La crème glacée* [Ice cream] is composed of 13 pages, including the title page, 68.83 words and 370.50 characters were found on each page. This book was created to represent the second component (*External cause*), in the first stage. The story described a young girl who lost her ice cream cone and stole her friend's ice cream cone. Her friend then became upset. However, when a new friend is willing to share his dessert with both children, the three end up being very happy.

The third book, *Le cadeau surprise* [The Surprise Gift] is composed of 13 pages, including the title page, 68.67 words and 365.59 were found on each page. This book was created to represent the third component (*Memories*), in the first stage. The story is about children receiving a gift they were not expecting. Some children were disappointed with the surprise while others were happy.

The fourth book, *Annie a peur du chien* [Annie is scared of the dog] is composed of 13 pages, including the title page, 50.50 words and 269.67 characters were found on each page. This book was created to represent the fourth component (*Desire*), in the second stage. The story is about a young girl's love for a dog while he is in his cage. However, the dog's surprise escape scared her as she did not see him escape the cage.

The fifth book, *Les souvenirs* [Memories] is composed of 9 pages, including the title page, 69.75 words and 353 characters per page. This book was created to represent the fifth component (*Belief*), in the second stage. This story is about how memories can affect our present emotions and that reflecting on happy memories when sad can change our sadness into happiness, and vice versa.

The sixth book, *Le livre brisé* [The Broken Book] is composed of 9 pages including the title page, 69.25 words and 377.5 characters per page. This book was

created to represent the sixth component (*Real and apparent emotion*), in the second stage. This story is about a young boy who's favorite book got ripped and he is extremely sad. He tries different strategies to try to be happy again.

The seventh book, *Le hockey*, [Hockey] is composed of 10 pages including the title page, 215 words and 246 characters per page. This book was created to represent the seventh component (*Hiding*), in the third stage. This story is about a young hockey player who doesn't like losing, but loses against his best friend. He is upset but hides his sadness with a smile because he doesn't want to hurt his friend's feelings.

The eighth book, *Le voyage*, [The trip] is composed of 10 pages including the title page, 270 words and 313 characters per page. This book was created to represent the eighth component (*Mixed*), in the third stage. This story is about a young girl who travels to go see her grandparents, and she feels mixed emotions about seeing her grandparents and not seeing her friends.

The ninth book, *Le château de sable*, [The sand castle] is composed of 14 pages including the title page, 295 words and 241 characters per page. This book was created to represent the ninth component (*Morality*), in the third stage. The story is about a young girl who breaks her brother's sand castle but lies about doing so. She then feels guilty and tells the truth.

## 2.3 Procedure

An overview of the procedure is demonstrated in Figure 3. All children were seen seven times over a 3-week period at their respective schools. Children were divided into two equal groups, a control group as well as an experimental group. The first session lasted approximately 45 minutes and during this session, children individually completed

the vocabulary measure *ÉVIP*, the TEC (pre-measure, see below) as well as the letter naming measure to assess alphabetical knowledge, in a counterbalanced order. The children in the experimental group were individually read the 9 picture books created for this study. The children in the control group were read nine picture books that had no relation to emotions. The experimenter read the books in a straightforward manner, without commenting, defining words or terms, elaborating, pointing to elements on the pages or emphasizing specific words or phrases with their voice. If a child was to diverge from the story, for example, by talking about an unrelated topic, the experimenter would kindly redirect the child.

For sessions 2-6 (approximately 20 minutes each) only the books were read to the children individually or in small groups. For session 7 (last session, approximately 30 minutes), the books were once again read to the children individually followed by the TEC (post-measure). The experimenter was told not to answer questions from the child or to ask them questions about the story. Only the illustrations from the books were presented to the children. The experimenter read the pages with the text separately.

The general procedure for the TEC is explained as followed. It can be divided into two steps. First, the experimenter reads the story about the character in the illustrations. The cartoon scenario is shown to the children. The face(s) of the character(s) in the cartoon are left blank. The stories are read in a neutral way, and the experimenter tries to remove verbal and nonverbal emotional cues. Secondly, the child has to make an emotional attribution to the main character after hearing the story by pointing to the most appropriate of the emotions out of four possible outcomes, which are illustrated under the scenario.

The four possible outcomes were two non-negative emotions (happy/just all right) as well as two negative emotions (sad/scared, sad/angry or scared/angry), see Figure 2. The position of the correct response across test items was randomized. Sometimes, control questions were asked in order to verify the child's comprehension of the situation. For example, one of the questions on the TEC is as follows: "This girl, we will say that her name is Christiane (experimenter points to girl on the right), and this one here (experimenter points to girl on the left), we'll say that her name is Pierra. Christiane and Pierra are very thirsty. Christiane loves Coca Cola, but Pierra really dislikes Coca Cola. Can you open the box? (child lifts transparent paper). There is a bottle of Coca Cola in the box!" Before asking the child how both girls feel (according to their desires), the control questions, to verify the child's comprehension are as follows: "Does Christiane (point) like Coca Cola? Does Pierra (point) like Coca Cola?". On the TEC, the nine separate blocks, each assessing one of the nine components of the understanding of emotions were presented to children in a fixed order. The first block was *Recognition* of emotions based on facial expressions (e.g. recognition of the face of a sad person). The second block focused on the understanding of external *causes* of emotions (e.g. attribution of an emotion of somebody being chased by a bear). The third block focused on the understanding of *desire*-based emotions (e.g. two individuals with opposite desires, attributing an emotion to each character in the same situation). The fourth block focused on the understanding of *belief*-based emotions (e.g. attributing an emotion to a rabbit eating a carrot, not knowing that a fox is hiding near them). The fifth block focused on the understanding the influence of a *reminder* on a current emotional state (e.g. attribution of an emotion to a character who thinks of the loss of a pet). The sixth block



focused on the understanding of the *regulation* of an experienced emotion (e.g. attribution of a psychological strategy, for example, thinking of ‘happy thoughts’ when a character wants to stop feeling angry. The seventh block focused on *hiding* a true or underlying emotional state (e.g. using a smile to hide a true feeling of anger). The eighth block focused on the understanding of *mixed* emotions (e.g. feeling both happy and scared in a given situation). Finally, the last block focused on *morality* (e.g. emotions felt after lying, stealing, etc.).

## Chapter 3

### 3 Results

The aim of the analyses was to determine the effect of the nine picture books on the children's comprehension of emotions and to demonstrate any relationships between receptive vocabulary, word reading and emotion comprehension.

#### 3.1 Emotion Comprehension

Table 4 shows means and standard deviations at pre-test and post-test as a function of group for scores on all 21 items. For the overall TEC scores on all 21 items of the TEC, a 2 (group : control, experimental) x 2 (time: pre, post) mixed-design analysis of variance (ANOVA) was used, with the group as a between-subjects factor and time as the within-subject factor. Results revealed no main effect of group  $F(1,43) = 1.34, p = .26$ . The main effect of time was significant,  $F(1,43) = 36.91, p < .01, \eta^2_p = .46$ . The interaction between group and time was marginally significant,  $F(1,43) = 3.03, p = .09, \eta^2_p = .07$ . Consequently, a priori contrasts were conducted.

Simple main effect tests were used to explore the interaction. Dunn's correction was applied so to be considered significant,  $p$  had to be smaller than .038. For the experimental group, there was a significant difference in the scores between pre- and post-test,  $F(1,22) = 29.25, p < .038, \eta^2_p = .57$ . There was also a significant difference in the scores from the control group between pre- and post-test,  $F(1,21) = 14.93, p < .038, \eta^2_p = .416$ . More precisely, these results showed a higher score at post-test than at pre-test for both groups. At pre-test, the difference in the scores from both groups was not significant,  $F(1,45) = .03, p = .87$ . At post-test, the difference in the scores from both

groups was marginally significant, with scores being higher for the experimental group  $F(1,45) = 3.82, p = .06$ .

Table 5 shows means and standard deviations at pre-test and post-test as a function of group for scores on 9 components. For the TEC scores that looked at the children's knowledge of the 9 components of emotion comprehension, a 2 (group : control, experimental) x 2 (time: pre, post) mixed-design analysis of variance (ANOVA) was used, with the group as a between-subjects factor and time as the within-subject factor. Results revealed no main effect of group  $F(1,43) = .17, \eta_p^2 = .004, p = .68$ . The main effect of time reached significance,  $F(1,43) = 43.54, p < 0.01, \eta_p^2 = .50, p < 0.01$ . The interaction between time and group also reached significance,  $F(1,43) = 4.28, \eta_p^2 = .09, p = .045$ . Simple main effect tests were used to explore the interaction. Dunn's correction was applied so to be considered significant,  $p$  had to be smaller than .038. There was a significant difference in the scores from the experimental group at pre and post-test,  $F(1,22) = 29.26, \eta_p^2 = .57, p < .038$ . There was also a significant difference in the scores from the control group at pre and post-test,  $F(1,21) = 14.93, \eta_p^2 = .42, p < .038$ . These results show that both groups performed better at post-test, with scores being higher for the experimental group (see Table 5).

### 3.2 Receptive Vocabulary and Reading Tasks

An analysis of variance (ANOVA) revealed no significant difference between the experimental group ( $M = 81.52, SD = 20.23$ ), and the control group ( $M = 89.45, SD = 26.42$ ), from the *ÉVIP* raw scores at the beginning of the experiment,  $F(1,45) = 1.29, p = .26$ . Thus, the two groups did not differ in terms of their receptive vocabulary skills.

For the first reading task, children were asked to sound out a total of 28 complex graphemes. An analysis of variance (ANOVA) revealed no significant difference between the experimental group ( $M=21.26$ ,  $SD=5.93$ ) and the control group ( $M=20.81$ ,  $SD=5.71$ ) from the grapheme reading task at the beginning of the experiment,  $F(1,42) = .07$ ,  $p=.80$ ,  $\eta^2=.00$ . These results suggest that both groups were equally skilled at recognizing complex graphemes.

For the second reading task, children were asked to read words aloud until the discontinue rule could be applied or until they reached the 40<sup>th</sup> word. An analysis of variance (ANOVA) revealed no significant difference between the experimental group ( $M=17.43$ ,  $SD=11.08$ ) and the control group ( $M=18.59$ ,  $SD=10.56$ ) from the oral reading task at the beginning of the experiment  $F(1,45) = .128$ ,  $p=.72$ ,  $\eta^2=.00$ . These results suggest that both groups were equally skilled at reading French words aloud.

### 3.3 Correlations

Pearson's  $r$  correlations were computed to examine the relationship between raw *ÉVIP* scores (Vocabulary) and TEC (pre-test) scores (emotion comprehension). The correlations between the two variables were significant for both groups (control group:  $r=.63$ ,  $p<.01$ ; experimental group :  $r=.54$ ,  $p<.01$ ) suggesting that the better the child performs on the receptive vocabulary task, the better they perform on the test of emotion comprehension before the intervention. A second Pearson's  $r$  was computed to examine the relationship between children's knowledge of the complex graphemes and the TEC (pre-test) scores. The correlations between the variables were significant for both groups (control group :  $r=.51$ ,  $p<.05$ ; experimental group :  $r=.47$ ,  $p<.05$ ). This relationship suggests that the more complex graphemes children are able to identify, the better they

perform on the TEC before the intervention. A third Pearson's  $r$  was computed to examine the relationship between children's knowledge of French words and the TEC (pre-test) scores. Correlations between variables were significant for both groups (control group:  $r=.60, p<.01$  ; experimental group :  $r=.57, p<.01$ ). This relationship suggests that the more skilled children are at reading words, the better they perform on the TEC at pre-test.

## Chapter 4

### 4 Discussion

The goal of the current study was to use shared-book reading as a tool to teach emotion comprehension skills to school-aged children. We used nine children's picture books created based on the Pons and Harris model of emotion comprehension to teach the nine components of emotion comprehension. It was hypothesised that the children in the experimental group would demonstrate a higher gain of emotion understanding after the seven exposures to the picture books compared to the children in the control group.

Analyses were done for the children's knowledge of the nine components of emotion comprehension as well as for the 21 individual questions on the TEC. It was crucial to observe children's understanding of emotions at pre-test in order to verify whether or not children in both groups differed in terms of their emotion understanding before being exposed to their respective books. When comparing the experimental and control groups at pre-test, no significant differences were found, suggesting that all children were at comparable stages in terms of their emotion comprehension before the intervention.

When comparing pre-test and post-test scores on all 21 items of the TEC for the experimental group, children performed significantly better at post-test. When comparing pre-test and post-test scores for the control group, children also performed significantly better at post-test. Thus, these results suggest that all children's comprehension of emotions improved after three weeks, regardless of their assigned group. Although the difference was not significant, the experimental group did perform better than children in the control group at post-test.

In the current study, analyses were also conducted to look at scores on all 9 stages of emotion comprehension based on the model of emotion comprehension (Pons & Harris, 2000; Pons, Harris & de Rosnay, 2000). Our findings were similar to those mentioned previously. When comparing scores at pre-test and at post-test for the experimental group, children performed significantly better at post-test. This was also the case for children in the control group. Thus, all children performed better at post-test regardless of which group they belonged to.

An explanation as to why both groups improved at post-test, with no significant difference between both groups could be the length of time. Because children are in the key years of development and of the process of developing emotion comprehension (Pons & Harris, 2000; Pons, Harris & de Rosnay, 2000), it is possible that the gains were simply due to the children getting older and being further in their development after three weeks.

Previous studies have shown that the process of teaching emotion comprehension can take months or even years and this could serve as a potential explanation as for why children in the experimental group did not significantly differ from the control group at post-test. For instance, Pons et al., (2002) examined the possibility of teaching emotion understanding using the SMILE program and found significant improvement after 30 hours during a 3-month period. Grazzani et Ornaghi (2011), Ornaghi et al., (2014) and Grazzani et al., (2015) all found significant gains in emotion understanding after 15 or 16 sessions over a two-month period. A study by Schonert-Reichl et al., (2012) aimed to decrease aggressive behaviours, promote prosocial behaviors as well as facilitate development of the understanding of socioemotional dimensions. This was done over a

period of nine months, with three sessions per month. Significant gains were found at the end of this intervention. These studies demonstrate that even with different approaches and interventions, significant gains were found after a longer period of time. However, it was not observed whether or not gains were present at various moments during the intervention and it is thus unclear whether changes in emotion comprehension appeared after shorter periods of time, before the end of the intervention. Supplementary studies would be needed to observe this idea.

Nonetheless, in the current study, because the gains from the children in the experimental group were stronger than those from children in the control group, this suggests that some components in the intervention may have been useful to teach emotion comprehension in a shorter period of time. The goal of the current study was to look at the effectiveness of a short, simple approach that consisted of using shared-book reading only as a tool to teach emotion understanding. Past studies that aimed to teach different components of emotion comprehension were lengthy, complex, and used methods with a variety of different activities, often combining some of them. Most of them also supported the idea that different components of emotion comprehension could be acquired (Grazzani et Ornaghi, 2011, Ornaghi et al., 2014, Grazzani et al., 2015, Schonert-Reich et al., 2012). For example, the SMILE program, which aims to teach children about identifying their own emotions, those of others and to have discussions about emotions, is complex, includes multiple different modules and topics and also requires teachers and administrators to receive training prior to implementing it (Pons et al., 2002). However, because of the complex methods in studies such as this one, trying to isolate the active component(s) that could explain the gains is a difficult task. It is



unknown whether there is one or multiple active component(s) or if the interaction of the activities is what creates the gains. Thus, the current study looked at whether or not gains could be observed after a simple, shorter intervention.

Because the gains in the current study were modest, it could potentially be useful to add another activity that has been shown to be effective in previous studies, such as having discussions and eliciting conversations about emotions after reading the books, while still keeping the method simple. For instance, Grazzani and Ornaghi (2011) examined the effectiveness of an intervention aiming to teach emotion comprehension to young children by reading short stories, playing games aiming to elicit conversation and using language linked to emotions. Ornaghi, Brockmeier and Grazzani (2014) explored the effectiveness of an intervention aiming to teach comprehension of the nature and causes of the regulation of emotions as well as understanding empathy and theory of mind to 7-year-old children. The intervention consisted of reading short stories to the children. After the reading of the short stories, children in the experimental group were encouraged to have a conversation about their own emotional experiences. Children from the control group were asked to draw a picture about the story they had just heard. Significant results were found for the experimental group and significant gains were also found on the theory of mind and empathy scales. These gains were maintained 6 months later. Grazzani, Ornaghi and Crugnola (2015) used the same design as the study highlighted previously but focused on teaching the nine components as a function of security and attachment. Once again, it was found that eliciting conversation about the storybooks was an effective strategy to teach emotion comprehension to children in the control group. In this study, children with an insecure attachment are the ones who

benefited the most from this intervention. Thus, taking the methods from these studies into consideration, a useful strategy could be to encourage children to talk about their own emotional experiences after each story, relating to the content of each book.

Isolating different components from past interventions, such as eliciting conversation about emotion from the books or eliciting discussion about the stories while using the same methodology as the current study could potentially have allowed for more significant gains.

## **4.1 Vocabulary and Reading Tasks**

Analyses revealed that both groups were at similar stages in terms of their receptive vocabulary skills, at recognizing complex graphemes as well as reading French words aloud before the intervention. Significant positive correlations were found between receptive vocabulary and emotion comprehension, between complex grapheme recognition and emotion comprehension as well as between word reading and emotion comprehension before the intervention, thus showing a relationship between emotion comprehension and language. In a previous study that looked at the relationship between receptive vocabulary and emotion competence, Beck, Kumschick, Eid and Klann-Delius (2012) also found a significant correlation between the two. In the aforementioned study, authors found a relationship between receptive vocabulary and emotion knowledge in school-aged children between the ages of 7 to 9. These results support our findings, suggesting that receptive vocabulary skills and reading skills could be significant predictors of emotion comprehension. These results go against findings by LaForge et al., (2018) who found no significant relationship between language competence and emotion comprehension in preschoolers. Results from the current study, who looked at older,

school-aged children, suggest that this relationship can appear when children are older and attending school because they have received formal education in language, and are thus further along in their language development. The findings from the current study are supported by the cognitive model of the development, a model which demonstrate a positive relationship between children's language abilities and their emotion comprehension. Thus, the more their language abilities are developed, the better their emotion comprehension (Cutting et Dunn, 1999 and Pons, Lawson, Harris & De Rosnay, 2003). This model also suggests that there is a significant relationship between emotion comprehension and the way family members such as parents speak about emotions. For example, speaking about the causes and consequences has been shown to be a significant factor in promoting good emotion comprehension (Pons et al., 2004) because children become able to communicate and have conversations about emotions, which has been shown to be one of the biggest predictors of their emotion comprehension skills (e.g., Harris, 2000).

## **4.2 Limitations and Future Directions**

One important limitation to consider is sample size. A bigger sample size would have allowed for stronger statistical power to potentially find a significant difference between both groups at post-test. Future studies should try recruiting bigger samples in order for both groups to be larger. A large number of children in each grade would allow for a comparison across grades.

Another limitation is the fact that some of the older children wanted to read the books on their own, and some children did not want to listen to the books after the 3<sup>rd</sup> or 4<sup>th</sup> visit, which could have impacted their attention on the specific components we were

trying to teach. Future studies could also implement paired reading as a means to allow the children to be more involved in the process of reading. Younger children could be paired with older children and together, they could read the books. The younger children could read independently and be supported by the older children who act as models and teachers by also reading and promoting discussion and understanding. This approach has been shown to have many advantages in terms of learning, self-discipline and the reading process itself (Topping, 1989).

Future research could create different books for each component (for instance, 7 books for each of the 9 components) to eliminate the potential for boredom and loss of attention. These books could be created with the same format as the current books, and having different characters and storylines, all while keeping the story related to the component. This would mean that a new book would be presented to the child at each session.

Future studies could potentially isolate components from other studies that have been shown to be effective, such as having a discussion before, during or after the readings to allow children to be more engaged and to explore the content of the books (Brownell, Svetlova, Anderson, Nichols, & Drummond, 2013; Grazzani & Ornaghi, 2011). Although the goal of the study was simply to repeatedly present the same content to the children to be consistent with the method by Evans and Saint-Aubin (2013) who found significant vocabulary gains after repeated exposures to novel words, previous studies have found that having discussions about emotions can improve children's emotion understanding (Brownell, Svetlova, Anderson, Nichols, & Drummond, 2013; Grazzani & Ornaghi, 2011). Future studies could add activities or questions to encourage

the child to reflect and discuss on the material presented, thus combining both approaches while also keeping the method simple and short.

### **4.3 Implications**

Emotion comprehension has been shown to have many positive impacts on social relationships, on academic achievement as well as on behaviour and conflict resolution (Banerjee, Watling, 2005 ; Denham, McKinley, Couchoud, et Holt, 1990 ; Hughes, Dunn, & White, 1998 ; Izard, Fine, Schultz, Mostow, Ackerman, & Youngstrom, 2001). Other studies have also shown that children with good emotion comprehension are less at risk of developing symptoms of anxiety and depression (Rieffe & de Rooij, 2012; Rieffe, 2008). Thus, with the many advantages that come with a good comprehension of emotions, it is important to find effective ways to teach emotion understanding to children. This allows them to benefit from skills that will be useful for them in various areas. With the many advantages also associated with shared book reading, using an approach that combines shared reading with emotion comprehension is an effective way to target multiple areas of development and functioning. Children have been shown to be very engaged in shared book reading. Thus, tools such as books that are written based on models of emotion comprehension could be used by teachers in the classroom. Parents could also use these tools at home with their children. This approach also has other benefits; it is easily accessible, inexpensive and does not require extra training for those who administer it.

### **4.4 Conclusion**

Little research has been done on shared-book reading as a potential tool to teach emotion comprehension to children. The goal of the current study was to use shared-book

reading using books created based on current theories of emotional development to teach all nine components of emotion comprehension to school-aged children, as previous studies only looked at the first six components with pre-school aged children. A bigger sample size, creating different books and eliciting conversation, discussion and reflection could potentially improve the methodology and add to the current study's findings. While the results from this study provided little support that shared-book reading alone could be used as a tool to teach emotion comprehension, valuable insight was gained that can contribute to the slight amount of literature in the field and to future studies.

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Table 1

*Stages and Competencies of Emotion Comprehension*

Stage 1 <u>External Causes of Emotions</u>	Stage 2 <u>Internal Causes of Emotions</u>	Stage 3 <u>Complex Causes of Emotions</u>
<i>Component I</i> (Recognition)	<i>Component III</i> (Desires)	<i>Component VI</i> (Real / Apparent Emotions)
<i>Component II</i> (External causes)	<i>Component IV</i> (Beliefs)	<i>Component VIII</i> (Mixed)
<i>Component V</i> (Memories)	<i>Component VII</i> (Hiding)	<i>Component IX</i> (Morality)

Table 2

*Example for each component of the model of Emotion Comprehension*

<u>Component</u>	<u>Example</u>
I : Recognition	Recognizing basic facial expressions (fear, anger, joy)
II: External Causes	Understanding someone is sad because they lost their favorite toy
III: Memories	Understanding that someone else can feel sad when remembering the day their pet passed away.
IV: Desires	Understanding that a child may feel happy about eating pasta for dinner because that is what they wanted, whereas another child may feel sad because that is not what they wanted.
V: Beliefs	Understanding that someone may feel happy because they do not know their toy got stolen
VI: Real and apparent Emotions	Understanding that a child can feel sad, but hide it with a smile
VII: / Hiding	Understanding that it is possible to think of something happy to stop being scared or sad.
VIII: Mixed	Understanding that it is possible to feel two emotions at once, such as feeling happy to go back to school and also sad that summer is over.
IX: Morality	A child can understand that actions such as lying can affect emotions (i.e: feeling sad after lying to parents)

Table 3.

*Total number of students recruited from each grade.*

Grade	Number of students
1	12
2	5
3	10
4	12
5	5
6	1

Table 4

*Means (M) and Standard Deviations (SD) from Test of Emotion Comprehension Scores at Pre- test and Post-test as a function of Group (on all 21 components)*

Groups	<u>Pre-test</u>		<u>Post-test</u>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Experimental (n =23)	18.61	1.27	20.00	.80
Control (n = 22)	18.55	1.34	19.32	1.46

Table 5

*Means (M) and Standard Deviations (SD) from Test of Emotion Comprehension Scores at Pre- test and Post-test as a function of Group (on the 9 stages)*

Groups	<u>Pre-test</u>		<u>Post-test</u>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Experimental (n = 23)	6.65	1.23	8.04	.825
Control (n = 22)	6.86	1.17	7.59	1.18



Éli est triste parce que son livre préféré est brisé. Il aimait tellement ce livre plein de belles images. Il est difficile maintenant de bien voir les images car les pages sont toutes déchirées. Éli a de la peine.

Figure 1. *Sample page from Book 6, Les Souvenirs. Translation: Éli is upset because his favourite book is broken. He really loved this book full of nice pictures. Now, it's hard to see the pictures because the pages are all ripped. Éli is sad.*

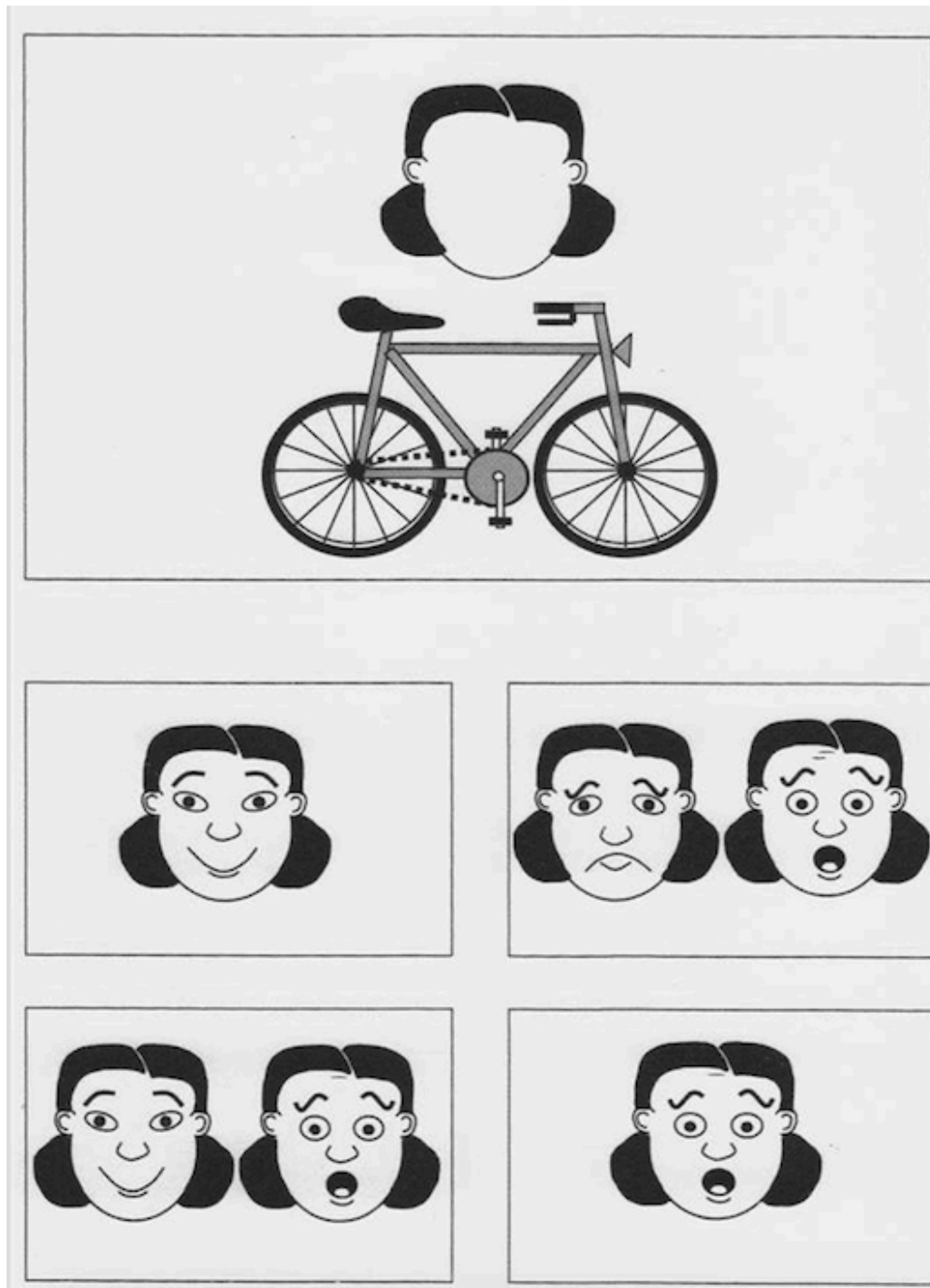


Figure 2: *Example of scenario on TEC from component VI (Mixed)*

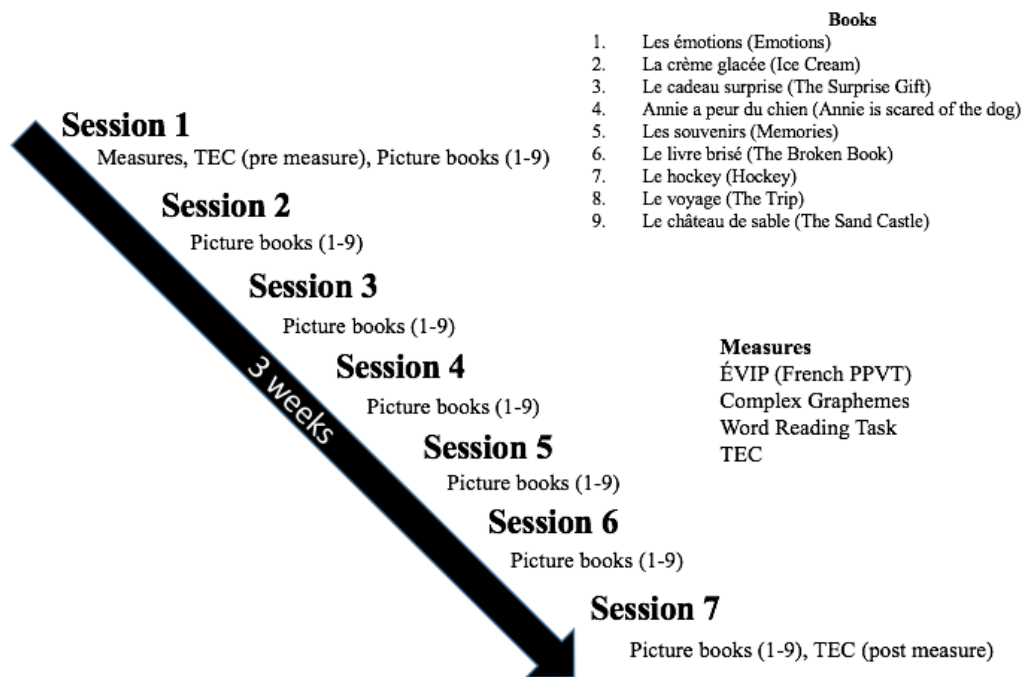


Figure 3 : *Overview of the procedure*